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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/729,034	12/04/2003	Kuan-Lun Chang	67,200-1157	8853

7590 04/25/2007
TUNG & ASSOCIATES
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EXAMINER

GARCIA, JOANNIE A

ART UNIT	PAPER NUMBER
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2823

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
3 MONTHS	04/25/2007	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

Office Action Summary

Application No.

10/729,034

Applicant(s)

CHANG ET AL.

Examiner

Joannie A. Garcia

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-7, 10, 11 and 22-32 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 10 and 26-32 is/are allowed.
- 6) ☒ Claim(s) 1, 3, 5-7, 11, 22, 23 and 25 is/are rejected.
- 7) ☒ Claim(s) 2, 4 and 24 is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on ____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. ____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- ☐ Notice of References Cited (PTO-892)
- ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- ☐ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date ____.
- ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. ____.
- ☐ Notice of Informal Patent Application
- ☐ Other: ____.

The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

Claims 1, 3, 5-7, 11, 22, 23, and 25, are rejected under 35 U.S.C. 102(e) as being anticipated by Kiyotoshi (US 2004/0152258 A1).

The rejection is maintained as stated in the Office Action mailed 01-04-07, and as stated below.

Kiyotoshi discloses a first MIM capacitor structure disposed in a first IMD layer 213 comprising a first upper electrode 204a and a first lower electrode 202a (Figures 17-18), at least a second MIM capacitor structure arranged in stacked relationship in an overlying IMD layer 214 comprising a second upper electrode 210a and second lower electrode 208a separate from said first upper and first lower electrodes to form an MIM capacitor stack (Figures 17-18), wherein a lowermost MIM capacitor structure is formed in an IMD layer greater than about the second IMD layer formed over a semiconductor wafer (Figures 17-18), wherein, the first lower electrode is arranged in common electrical signal communication comprising electrically communicating vias with the second upper electrode and the first upper electrode is arranged in common electrical signal communication with the second lower electrode to form said MIM capacitor stack in parallel electrically relationship (Figure 18, and Paragraph 0082), wherein the respective upper and lower electrodes comprise a metal selected from the group consisting of Al, Cu, Ta, Ti, and nitrides that comprise silicided nitrides thereof (Paragraphs 0049 and 0066), wherein a respective lower electrode of a respective MIM capacitor structure has a width dimension greater than a respective upper electrode (Figure 17), and wherein the upper electrodes including

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electrically communicating metal filled vias of the respective MIM structures in the MIM capacitor stack comprise a substantially identical structure (Figure 18), a tantalum oxide capacitor dielectric sandwiched between the respective upper and lower electrodes (Figure 18, and Paragraph 0071), and respective upper and lower electrodes comprise TiN, or TaN (Paragraph 0066).

Applicant argues that Kiyotoshi et al does not teach a first and second IMD layers, first lower and upper electrodes in the first IMD layer and the second layer and upper electrodes separate from the first lower and upper electrodes in the overlying IMD layer. However, Hiyotoshi et al discloses a first and second IMD layers 213/214, first lower and upper electrodes 202a/204a in the first IMD layer and the second layer and upper electrodes separate from the first lower and upper electrodes in the overlying IMD layer, as shown in Figures 17 and 18, and as disclosed in Paragraphs 0079, 0066, and 0082.

Claims 2, 4, and 24, are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Claims 10, and 26-32, are allowed.

THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

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A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Joannie García whose telephone number is (571) 272-1861. The examiner can normally be reached on Monday through Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Matthew Smith, can be reached on (571) 272-1907. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR

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system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



JAG

April 12, 2007

GFourson
Primary Examiner



George Fourson
Primary Examiner
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